Strath 7:

Strollamus to Torrin



Coire Garbh (left) and Creagan Dubh (right) viewed from Creag Strollamus towards the SW. The low ground to the east (right) is Srath Beag, the little valley, which links Strollamus in the north with Torrin to the south.

Aspects covered: Paleocene granites of the Eastern Red Hills Intrusive Centre; hydrothermally-altered Paleocene plateau lavas and conglomerates; Lower and Middle Jurassic sedimentary strata; Upper Cretaceous flintbearing limestones; gneiss of the Lewisian Gneiss Complex; Cambro-Ordovician dolostones; a fault between Cambro-Ordovician and Jurassic strata.

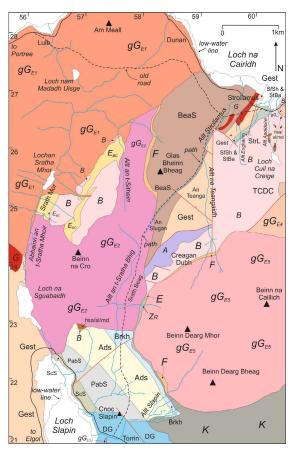
Route: Strollamus - Allt Strollamus (- Allt Eoghainn - Loch Cùil na Creige - Allt Apoldoire -) - Allt na Teangaidh - (-Coire Garbh -) - Creagan Dubh - Srath Beag - Allt an t-Sratha Bhig - Allt Slapin - Torrin.

Distance: 8 kilometres.

Time: 7-8 hours.

General comments: This non-circular excursion is a walk through (the valley of) <u>Srath Beag</u>, linking <u>Strollamus</u> in the north with <u>Torrin</u> in the south. The excursion contains elements of **Strath 6 (Creag Strollamus)** and **Strath 9 (Kilchrist)**, together with locations along the length of the valley. It provides an excellent walk, much of which is on low ground. The excursion can, of course, be undertaken in reverse order. Ideally, transport at both ends negates the need to retrace back to the starting point.

The starting point is at the <u>abandoned quarries</u> on the Broadford-Portree (A87) road 5km (3 miles) NW of <u>Broadford</u>. The pickup point is near the abandoned marble quarry (<u>Cnoc Slapin</u>) on the NW side of <u>Torrin</u> (on the Broadford-Elgol (B8083) road, 9km (5.5 miles) SW of <u>Broadford</u>). Parking is available at both ends of the route.



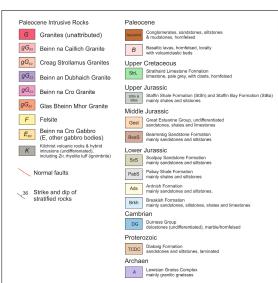


Figure Strath 7.1: Summary map of the Creag Strollamus to Torrin area.



Figure Strath 7.2: Annotated Google Earth® image of the Creag Strollamus to Torrin area. Symbols as in Figure Strath 7.1.

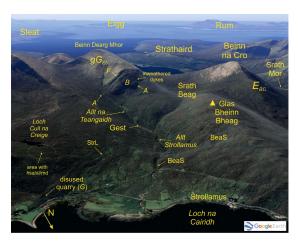




Figure Strath 7.3: Annotated oblique Google Earth® images of the Creag Strollamus to Torrin area. Symbols as in Figure Strath 7.1.

Locality 1 [NG 6030 2667]:

From the start point on the Broadford-Portree (A87) road where it meets the (gated) old road at [NG 6008 2664] east of Strollamus, proceed c. 75m NE along the old metalled road (which runs parallel to the main road) to a small abandoned quarry on the SE side. This quarry is within a granite of the Eastern Red Hills Intrusive Centre. The granite has a mottled appearance on weathered surfaces. Where fresh it is light grey with prominent offwhite phenocrysts of feldspar (up to 5mm) and smaller (1–2mm) crystals of quartz. Clots of hornblende and biotite can also be identified.

A second quarry, located at the turn-off, is within Paleocene hydrothermally-altered plateau lavas. This rock is bluish-green, devoid of obvious structures such as columnar joints, but contains breccia facies, amygdales and veins of secondary minerals such as carbonates, epidote and chlorite. There is no obvious evidence for defining individual lavas.

Continue SW along the <u>old disused road</u> to a point 25m beyond the <u>Allt Apoldoire</u>, opposite a small pedestrian gate. Here, and for 25m to the SW, on the south side of the <u>old disused road</u>, are exposures of the Upper Jurassic Staffin Shale Formation. These strata are cut by a *c*. 2m-wide, altered, basalt dyke. The Jurassic strata are highly fractured and rust-red weathered. Where fresh they are bluish grey and relatively hard due to the thermal metamorphic effects of the nearby granites. Bedding strikes NW-SE and dips at approximately 20° to the NE.

Continue west along the <u>old disused road</u> towards the <u>Allt Strollamus</u>. In doing so, note thermally metamorphosed sandstones, shales and limestones of the Middle Jurassic Great Estuarine Group on the south side of the road. Within the <u>Allt Eoghainn</u> there is an apophysis of granite.

Locality 2 [NG 5936 2646]:

A few metres south of the <u>old bridge over the Allt Strollamus</u>, sandstones, calcareous sandstones and limestones, from near the top of the Middle Jurassic Bearreraig Sandstone Formation, have been thermally-metamorphosed by the nearby granites to quartzites and calc-silicate -bearing marbles.

The path to Torrin begins *c*. 20m west of the old bridge, but as the best exposures are within the stream bed, proceed south along the west bank of the river, up the succession. The initial and dominant lithology of the Bearreraig Sandstone Formation is a pale sandstone that contains large, rounded masses of buff-coloured material, possibly representing calcareous concretions. Within these strata are small silicic intrusions. For example, *c*. 150m south of the old bridge, at a bend in the stream, a granite sheet forms a prominent exposure in the stream bed and in the west bank. Further south, in the vicinity of the first small east-flowing confluence of the <u>Allt Strollamus</u>, a small mass of brecciated granite is exposed. In the section south of this confluence there is a *c*. 35m-wide exposure of porphyritic felsite.

At this point in the excursion, there is the option to visit two localities that are also part of the **Strath 6: Creag Strollamus** excursion.

If included, proceed ESE over poorly exposed Paleocene plateau lavas for *c.* 500m to the <u>Allt Eoghainn</u> (and its minor tributary), where overhead powerlines cut across the stream.

Locality 3 [NG 5964 2613]:

In and adjacent to the main stream and its tributary, west below the minor crag formed by the overlying lavas, the Upper Cretaceous Strathaird Limestone Formation crops out.

These strata give rise to a verdant vegetation and the sequence is cut by minor intrusions. The formation is mainly exposed adjacent to and below these intrusions, giving rise to minor caves due to solution weathering and erosion. Stratigraphically below the Strathaird Limestone Formation are dark grey shales of the Upper Jurassic Staffin Shale Formation. An inclined sheet of dolerite occurs at the shale-limestone boundary.

Two sections can be identified. In the main stream, the sequence comprises c. 1.5m of bioturbated micritic limestone overlain by c. 3.5m of dark grey, highly crystalline micritic limestone. These beds have well developed joints and a significant development of stylolite surfaces, where material has been removed by pressure dissolution. Above are basaltic lavas.

In the tributary section, the base of the sequence is covered by boulders. The lowest exposed c. 1.2m consists of dark grey, bioturbated, micritic limestone, above which is c. 1.6m of dark grey micritic limestone with stylolites. The overlying c. 0.5m consists of a conglomerate facies, with pebbles of limestone, together with flints. The flints define bands within the limestone, are typically rounded, and may constitute some form of trace fossil burrow. The top of the sequence consists of c. 1.6m of grey micritic limestone with stylolites.



Strath 7.4: General view of the area around the Allt Eoghainn, south of Strollamus, where Upper Jurassic and Upper Cretaceous strata crop out. View is towards the east, with Creag Strollamus in the distance (left).



Strath 7.5: Dolerite sheet intruded along the contact between Upper Jurassic strata (Staffin Shale Formation, below intrusion, adjacent to minor path) and Upper Cretaceous strata (above, with distinctive pale appearance).



Strath 7.6: General view of the Strathaird Limestone Formation, Allt Eoghainn. Pole *c.* 1m long.



Strath 7.7: Detail of the micritic limestone facies of the Strathaird Limestone Formation, with minor cherts and stylolites, Allt Eoghainn. Hammer *c.* 30cm long.



Strath 7.8: Detail of the chert-rich facies of the Strathaird Limestone Formation, Allt Eoghainn. Coin c. 2.5cm across.

Proceed ESE to the NW end of <u>Loch Cùil na Creig</u> to where the <u>Allt Apoldoire</u> flows north out of the loch. Continue north along the <u>Allt Apoldoire</u> for 100m and thence 20m to the east.



Strath 7.9: Loch Cùil na Creige from the SW side of Creag Strollamus. The area surrounding the loch is composed of Paleocene lavas with interbedded conglomerates.

Locality 4 [NG 6023 2599]:

Here, crudely bedded conglomerates interbedded with the basaltic lavas crop out and dip to the east at 15–20°. They are composed of sub-angular to rounded boulders, cobbles and pebbles of dominant red Torridonian sandstone and grit, together with lesser amounts of Jurassic sandstone, limestone and shale, and Paleocene basalt and dolerite. The boulders/blocks are up to 50cm across. The dark, grey-green matrix ranges between grit and silt grade and the pebbles and cobbles are typically matrix-supported.



Strath 7.10: Poorly stratified sandstone and conglomerate within the lava sequence, NE of Loch Cùil na Creige. View is NE towards the summit of Creag Strollamus. Pole *c.* 1m long.



Strath 7.11: Weakly stratified, matrix-supported, polylithic conglomerate/breccia, NE of Loch Cùil na Creige. Hammer *c.* 30cm long.



Strath 7.12: Large sub-rounded boulder of Torridonian sandstone in a matrix-supported, polylithic conglomerate/breccia interbedded with basaltic lavas, NE of Loch Cùil na Creige. Coin *c*. 24mm across.

If Localities 3 and 4 have been included, subsequently return westwards to the <u>Allt Strollamus</u> to Locality 5. If omitted, continue (south) upstream from Locality 2. In either case, **Locality 5** is located at an obvious <u>water main marker</u> on the east bank of the <u>Allt Strollamus</u>.

Locality 5 [NG 5910 2589]:

The boundary between the Bearreraig Sandstone Formation and the overlying Great Estuarine Group is located here, c. 175m north of the confluence of the Allt Strollamus and the Allt na Teangaidh. To the south, exposures of the Great Estuarine Group consist of indurated black shales interbedded with thin, blue limestones, which occur close to the base of the group and dip to the SE at 40-50°. Both rock-types contain the bivalve Neomiodon. The stream runs parallel to the strike of the bedding at this point. Typically, the shales are more resistant to weathering and stand proud, whereas the limestones are generally inweathered. A c. 1m thick, rusty-orange -weathering, porphyritic felsite sill is intruded into these strata c. 30m north of the confluence. Proceed up the east side of the Allt na Teangaidh, over exposures of steeply-dipping Great Estuarine Group strata, easily observed for example at a small concrete weir and further south. These rocks are intruded by dykes of the Paleocene NW-SE -trending regional swarm.

Continue upstream to obvious exposures at the bottom of a prominent, cascading waterfall.

Locality 6 [NG 5911 2468]:

Here, the Archaean basement Lewisian Gneiss Complex crops out. It consists of deformed, steeply-dipping, alternating pale and dark bands. Quartz, alkali feldspar and plagioclase are dominant in the pale (leucocratic) portions, with chlorite, epidote, biotite and pale green amphibole dominating the dark bands. Thin, anastomosing, secondary veins of epidote and chlorite are common throughout the outcrop. The presence of chlorite and epidote in these rocks implies that they have undergone extreme hydrothermal alteration during the Paleocene, which caused retrogression of the original, high-grade, metamorphic minerals (amphibole and pyroxene) to the secondary mineral assemblage now present.



Figure Strath 7.13: Exposures of gneiss in a minor inlier of the Lewisian Gneiss Complex, in the Allt na Teangaidh. Iain Allison for scale.



Figure Strath 7.14: Detail of (banded) gneiss in the Allt na Teangaidh. Pole *c*. 1m long.

Cross over to the west bank of the Allt na Teangaidh and proceed upstream for c. 75m, to where a 0.5m-thick dolerite dyke, trending WNW-ESE, cuts the gneiss at a NW-flowing tributary. In the vicinity of this confluence and the waterfalls, small (up to 5m across) outliers of hydrothermally-altered Paleocene lava unconformably upon an irregular surface of gneiss. This relationship is also seen at Locality 7, below. Approximately 20m further upstream (to the south) the gneisses are totally covered by the lavas. These lavas are typically veined and contain amygdales (predominantly of carbonate, chlorite and epidote), together with patches of laterite. The mineralogies of the gneiss, lavas and laterite are indicative of the greenschist metamorphic facies, attributable to the Paleocene magmatic event.

From here, a minor detour can be made into <u>Coire Garbh</u> by continuing southwards along the western fork/tributary of the <u>Allt na Teangaidh</u>. The paleweathering Beinn na Caillich Granite of the Eastern Red Hills Intrusive Centre crops out east of the obvious dark crags of <u>Creagan Dubh</u>, which are dominated by hornfelsed basaltic lavas, dealt with in detail, below. The Beinn na Caillich Granite comprises phenocrysts (3-5mm) of quartz and alkali feldspar, set in a groundmass dominated by these minerals in a granophyric intergrowth. Sodium-rich plagioclase is also present and the main ferromagnesian minerals are hornblende and biotite.

Return north to Locality 6.

Proceed WSW to the base of the crags of Creagan Dubh and continue around the foot of the crags, first towards the west and then SW. These crags consist of hydrothermally altered Paleocene lavas. Continue over the remains of a stone wall until an old wooden post fence is reached. The fence runs from the lochan in the valley floor up to the crags. 35m beyond the fence, to the south, is the first of two steep gullies within the crags; the second occurs a further 45m to the SW. The gullies have formed by the differential erosion of Paleocene dykes of the NW-SE -trending regional swarm. SW of the second gully, at the base of the crags, the unconformity between the gneiss and the lavas is exposed.





Figure Strath 7.15: Creagan Dubh, viewed **(a)** towards the east, and **(b)** the reverse view, towards the west, into Srath Beag. The locations of the stone wall and lochan are indicated (see text).



Figure Strath 7.16: The Paleocene lava – Archaean Lewisian Gneiss Complex (angular) unconformity at the base of the Creagan Dubh (crags). Pole *c.* 1m long, with tip sitting on gneiss.





Figure Strath 7.17: Creagan Dubh, viewed looking towards the east. The prominent gullies are due to the preferential erosion of some of the many Paleocene NW-SE -trending regional dykes, relative to the terraced country-rock lavas. The lower image is a detail of southern (right) part of upper image.

Locality 7 [NG 5855 2417]:

The lava-gneiss unconformity is close to horizontal, although locally variable, and can be traced for at least 20m along strike. The lowest 6–8m of exposure is of gneiss. The gneiss has an obvious foliation, similar to the material described at Locality 6, above.

Return NE to the second gully, which allows a section through the overlying lava pile to be examined. These lavas are typical of the whole outcrop and commonly have dark green fresh surfaces, with complex amygdales comprising zeolites, carbonates, epidote and chlorite. also Hydrothermal minerals form abundant anastomosing veins within the lavas. Approximately 20m up this scree-filled gully, on the NE side, which should only be accessed if conditions are safe, conglomerates crop out. These conglomerates occur as large lenses, up to 5m thick, intercalated with the lavas and can be traced along strike for up to 100m. The cobbles are sub-angular to rounded, typically less than 10cm across, and are dominated by Jurassic sandstone, siltstone, shale and limestone, together with lesser amounts of Torridonian sandstone and grit.



Figure Strath 7.18: Typical hornfelsed basaltic lava of the Creagan Dubh sequence, with prominent amygdales and veins. Ruler 30cm long.



Figure Strath 7.19: Paleocene conglomerate within the lava-dominated sequence of Creagan Dubh. Pole $\it c.\,1m$ long.



Figure Strath 7.20: Detail of Paleocene conglomerate within the lava-dominated sequence of Creagan Dubh, with sub-angular to rounded clasts, typically less than 10cm across, dominated by Jurassic sandstone, siltstone, shale and limestone, together with lesser amounts of Torridonian sandstone and grit. Ruler 30cm long.

Return to the base of the crags and continue west down the grass-covered slope (consisting of poor exposures of the gneiss) to the path in the floor of the <u>Srath Beag</u>. Continuing south along the path, with the view towards the NE showing the contact relationship between the dark lavas and the younger paler Beinn na Caillich Granite of the Eastern Red Hills Intrusive centre.



Figure Strath 7.21: The lava-dominated crags of Creagan Dubh, with the younger paler Beinn na Caillich Granite of the Eastern Red Hills Intrusive Centre to the SE (topright).

Upon joining the path, continue south over discontinuous exposures of the Beinn na Crò Granite of the Eastern Red Hills Intrusive Centre to where the <u>Allt an t-Sratha Bhig</u> forms two prominent meanders.

Locality 8 [NG 5757 2278]:

Here, the path crosses a small stream flowing off the west side of Beinn Dearg Mhòr. This stream sinks above the path (to the east) into a deep swallow hole that can be seen immediately west of the path. Within the swallow hole there is a small cluster of trees. Care should be exercised in this area as the swallow hole is steep-sided, unstable, and deep. The swallow hole occurs in Lower Jurassic Breakish Formation limestones that crop out along the margin of the Beinn na Crò Granite. These steeply-inclined strata can be observed in the tributary east of the path and control the course of that stream.



Figure Strath 7.22: Lower Jurassic Breakish Formation limestones at the contact (not seen) with the Beinn na Crò Granite of the Eastern Red Hills Intrusive Centre. Pole *c.* 1m long.



Figure Strath 7.23: Swallow hole adjacent to path due to dissolution of Lower Jurassic Breakish Formation limestones at the contact (not seen) with the Beinn na Crò Granite of the Eastern Red Hills Intrusive Centre. Pole *c.* 1m long.

Continue south along the path over Breakish Formation limestones, sandstones and shales, also exposed in the stream bed of the <u>Allt an t-Sratha Bhig</u>.

Locality 9 [NG 5771 2132]:

Due east of <u>Cnoc Slapin</u>, where the path crosses the <u>Allt Slapin</u>, a vertical, faulted contact between Cambro-Ordovician Durness Group dolostones and Lower Jurassic sandstones and shales is marked by a 2m-wide zone of highly brecciated material, predominantly shale, in the form of disoriented blocks.



Figure Strath 7.24: Fault zone in the Allt Slapin, due east of Cnoc Slapin, with pale Cambro-Ordovician Durness Group dolostones (left-hand side) upthrown against dark Lower Jurassic sandstones, siltstones and shales (right-hand side). Pole *c.* 1m long.



Figure Strath 7.25: Detail of the fault zone in the Allt Slapin, with highly contorted and sheared Jurassic strata. Ruler 30cm long.

Continue SSW over the dolostones to the Broadford-Elgol (B8083) road.

Either return on foot to <u>Strollamus</u>, or, by far a better option, meet pre-arranged transport.

End of excursion.